Thermal analysis of interaction of epidermal lipids VI.

Martina Gillová, degree work, June 2010

Abstract

A skin separates the organism from the external environment, but at the same time it enables the contact with surroundings too. During transdermal aplication a drug has to get over a skin barrier, which is represented especially by outer skin layer, stratum corneum. This layer is composed of keratinized cells embedded in lipid matrix. Currently scientists are searching new substances, which will temporarily be able to increase permeability of the skin and facilitate penetrating of the drug through the skin barrier. We call these substances permeation enhancers.

In this work, we concentrated on the evaluation of interactions of cholesterol (one of the components of lipid matrix of stratum corneum) with permeation enhancer ETH5-10 by using DSC (differential scanning calorimetry). Then, we observed interactions of mixtures of these two substances with water. Every time we added such amount of water to our sample, that it made approximately 75% of the sample weight**.** We did the evaluation of individual components too. The sample with the composition of cca 50% cholesterol and 50% ETH5-10 standed out markedly from the range of another samples.